

April 15, 2015

Pamela Creedon, Executive Officer
Central Valley Regional Water Quality Control Board
10200 Sun Center Drive, Suite 200
Rancho Cordova, CA 95670-6114

Re: Request to complete North Canyon and Coon Hollow Legacy Pesticide Management Plans

Dear Ms. Creedon:

The Sacramento Valley Water Quality Coalition (SVWQC) and El Dorado Subwatershed request your determination that the Management Plans for the legacy organochlorine (OCL) dichlorodiphenyldichloroethylene (DDE) for North Canyon Creek and Coon Hollow Creek be deemed complete. The primary basis for this request is that implementation of relevant management practices is already extensive in both drainages and is adequate to prevent and control potential agricultural contributions to such exceedances. Additionally, North Canyon Creek is currently meeting WQOs for DDE and other OCLs.

This letter combines the previous requests for completion of the two management plans for the El Dorado subwatershed, and provides supplemental information requested by the Central Valley Regional Water Quality Control Board (Regional Water Board) for these requests staff. The two previous requests are attached for reference. The supplemental information provided below includes additional monitoring information, summaries of implemented practices in the El Dorado subwatershed, and maps of the enrolled parcels in the Coon Hollow and North Canyon Creek drainages.

BACKGROUND FOR MANAGEMENT PLAN REQUIREMENT

North Canyon Creek is a small tributary to the South Fork of the American River, in the Coloma Drainage of the El Dorado Subwatershed. Coon Hollow Creek is a very small tributary to South Canyon Creek, which is also a small tributary to the South Fork of the American River. The Coloma drainage (161,976 acres) is the largest in the Subwatershed and has the greatest percentage of irrigated acres (1,629 acres, or ~1%). North Canyon Creek currently serves as the representative monitoring location for the drainage and El Dorado Subwatershed, and Coon Hollow Creek served as a representative monitoring location for the El Dorado subwatershed for 2007-2008.

The North Canyon Creek management plan requirement for DDE was triggered by exceedances observed in March 2006 and February 2007. The Coon Hollow Creek management plan requirement for DDE was triggered by exceedances observed in April and July 2007. The observed concentrations exceeded the ILRP Trigger Limit based on the California Toxics Rule criterion of 0.00059 µg/L (for exposure through water and organisms).

The monitoring results indicate the following for North Canyon Creek:

- A total of 19 sample events have been conducted in North Canyon Creek for legacy organochlorine pesticides. There have been two (2) exceedances, observed in March 2006 and February 2007. The maximum concentration of DDE detected was 0.0107 µg/L. There were no exceedances in the twelve (12) samples collected since the last exceedance in February 2007.
- Discharge volumes measured by the Coalition in North Canyon Creek are small (0 – 21 cfs, average 2.7 cfs, Table 1). The low discharge rates during irrigation season and documented high levels of management practices ensure that irrigation runoff to the creek does not consist of very large volumes, and that loads in the creek are therefore unlikely to cause exceedances in the downstream receiving waters (South Fork American River).
- No other OCL compounds have been detected in 536 results for 19 sample events, and 30 of the 31 OCL compounds analyzed were not detected in any of the 19 samples collected (Table 2).

Overall, these monitoring data indicate that legacy OCLs are not a chronic problem in North Canyon Creek, and that management practices in this drainage and subwatershed are adequate to prevent exceedances of the water quality objective for DDE. The lack of exceedances since February 2007 indicates that North Canyon Creek is currently meeting the WQO for DDE and other legacy OCLs.

Monitoring results indicate the following for Coon Hollow Creek:

- A total of 17 sample events have been conducted for legacy organochlorine pesticides in the waters of Coon Hollow Creek, including one sample event at an upstream sample location. There have been nine (9) exceedances. The maximum concentration of DDE detected was 0.0164 µg/L (Table 1).
- Discharge volumes measured by SVWQC in Coon Hollow Creek are very small (0.10 – 0.74 cfs, Table 1). These low discharge rates and documented levels of irrigation management practices indicate that irrigation runoff to the creek does not consist of very large volumes, and that loads in the creek are therefore unlikely to cause exceedances in the downstream receiving waters (South Fork American River).
- Only two other OCL compounds (DDT and endrin ketone) have been detected in 432 results for 16 samples from the primary Coon Hollow Creek sampling site, and 27 of the 30 OCL compounds analyzed have not been detected in any of the 13 samples collected (Table 2).

SUMMARY OF EVALUATIONS SUPPORTING REQUEST

The following evaluations and factors support this request:

Assessment of Compliance with Water Quality Objectives	<ul style="list-style-type: none">• Twelve water samples collected since February 2007 in North Canyon Creek have no detected DDE or other OCLs.• DDE has been the only detected OCL in North Canyon Creek water samples.
Lack of agricultural contribution to exceedances	<ul style="list-style-type: none">• No current agricultural use of legacy OCL compounds• High degree of practices implemented to prevent erosion and sediment discharges in irrigation and storm runoff (see Implemented Practices below).
Implemented Practices	<ul style="list-style-type: none">• Practices are implemented <i>throughout the represented drainage</i> to

	control irrigation runoff for nearly every irrigated acre.
	<ul style="list-style-type: none"> Practices are implemented prevent erosion and sediment discharges for nearly every irrigated acre. More than 99% of the combined acreage in the two drainages is protected by at least three sediment and erosion control practices, with 74% implementing at least 4 practices.
Source Evaluations	<ul style="list-style-type: none"> Sediment samples for source evaluations indicated no likely discrete controllable sources. Agriculture was not indicated or excluded as a specific source.
Outreach and Education	<ul style="list-style-type: none"> Not specifically cited as a basis, but extensive outreach has contributed to further reducing the risk of agricultural contributions.

SOURCE EVALUATIONS

Legacy organochlorine (OC) pesticides in soils, sediments and water are a regional issue that affects virtually all historically agricultural areas of the Central Valley to some degree. In the Sacramento Valley watershed, there are 7 water bodies with a current management plan for legacy OC pesticides, including the two water bodies in the El Dorado subwatershed (Coon Hollow Creek, North Canyon Creek). Source identification sampling of sediments was conducted in North Canyon Creek and Coon Hollow Creek, and results were provided with Requests for Completion of the Management Plans previously submitted in 2013. In short, the source evaluation results did not indicate or exclude specific discrete agricultural sources of the DDE or the need for additional spatial focus of sampling for management of OCLs.

OUTREACH AND EDUCATION

Outreach and education efforts are not specifically cited as a basis for this request. However, growers in the subwatershed have been made aware of the management plan and specifically of the need for erosion and sediment control through the outreach efforts of the El Dorado County Agricultural Water Quality Management Corporation (EDCAWQMC). We believe that increased grower awareness has contributed to adoption of additional practices (discussed in **Management Practices** below, and illustrated in Figure 1 and Figure 2), and further reduction of the risk of sediment discharges from agriculture.

The El Dorado Subwatershed has participated in the Pilot Watershed Management Practices Program (Part II.B and Attachment D of Order No. R5-2009-0875) since 2010 and has met all program milestones on or ahead of schedule. In implementing this program, the EDCAWQMC has conducted extensive outreach and education throughout the subwatershed. Details of the outreach have been reported annually in reports for the Pilot Program, as well as in the SVWQC Annual Monitoring reports, and include:

- Reporting on ILRP issues at meetings of local commodity organizations (El Dorado Wine Grape Growers, Apple Hill Growers, Farm Trails, Christmas Tree Growers, Organic Farmers, and an informal irrigated pasture group).
- Coordinating with the County Agriculture Department, UCCE, NRCS and RCDs to inform growers of ILRP issues and deliver programs that address growers' needs related to managing water quality issues (e.g., cover crop and erosion control field day, irrigation management meetings, pest management meetings, and sprayer calibration field days).
- Newsletters informing all members of local and regional water quality issues and management options and resources.

MANAGEMENT PRACTICES

Coalition members may use various combinations of practices depending on the topographical characteristics, the soils and the microclimate on their property, as well as the commodities being grown. The implemented practices are selected specifically because they are effective for managing irrigation and erosion to eliminate, reduce, or slow the direct discharge of runoff and sediment to adjacent watercourses, and the effectiveness of the implemented practices is well established. Growers, vineyard and orchard managers and registered PCAs developed and implemented the practices with the assistance of experienced staff and agronomic professionals from the University of California Cooperative Extension (UCCE), Resource Conservation Districts (RCDs), the National Resource Conservation Service (NRCS) and the El Dorado County Agricultural Commissioner's staff. Implementation is characterized for the subwatershed as a whole, and required verification of practices confirms that the level of management practice implementation reported in the surveys applies in the subwatershed, the represented drainage, and in the Coon Hollow and North Canyon Creek drainage specifically. The data for Coon Hollow and North Canyon Creek confirm that implementation is extensive in these drainages as well as throughout the subwatershed.

The Pilot Watershed Management Practices Program requires annual reporting of all implemented management practices in the subwatershed, the most recent report for the program documents extensive and nearly universal implementation of practices¹. The widespread implementation of effective management practices provides further evidence that agriculture in the subwatershed is not the source of the legacy OCL exceedances. The practices most relevant to preventing discharges of legacy OCL compounds are erosion and sediment control management practices to prevent or minimize erosion and sediment discharges from storm runoff, and some specific irrigation management to prevent or reduce irrigation tailwater runoff and associated sediment.

Members operating 2,968 acres in the El Dorado subwatershed responded to the most recent surveys of management practices for El Dorado. The results for the combined reporting acreage for the entire El Dorado subwatershed are summarized in **Figure 1**:

- **Irrigation Management Practices:** Members reported implementing at least one of the irrigation management practices on 2,889 (97% of acres reporting), and four or more irrigation management practices were reported for 75% of the acreage. Members also planned to implement new practices on 17 of the 33 acres reported to have no irrigation water management practices currently implemented. Two irrigation management practices that are especially relevant to minimizing the potential for erosion and sediment transport include:
 - Participating in an irrigation management system (IMS) program provided by a local water purveyor or the EDCWA to schedule irrigation events to accurately provide water based on the plants' needs and soil moisture status. 78% of the enrolled acreage employs this practice.
 - Use drip or micro-sprinkler irrigation systems to maximize water application efficiency and reduce or eliminate tailwater runoff. 85% of the enrolled acreage employs this practice.
- **Erosion And Sediment Control Management Practices:** Members operating 2,886 acres reported having implemented at least one of the erosion and sediment control management practices

¹ *PILOT WATERSHED MANAGEMENT PRACTICES PROGRAM 2013-2014 ANNUAL REPORT*. Prepared by the El Dorado County Agricultural Water Quality Management Corporation representing the El Dorado Subwatershed of the Sacramento Valley Water Quality Coalition. June 30, 2014.

(97% of the 2,968 acres reporting), and four or more practices were reported for 80% of the acreage reporting. Members planned to implement new practices on 22 of the 156 acres reported to have no erosion and sediment control management practices currently implemented.

The Coon Hollow and North Canyon Creek drainages represent approximately 16% of the total El Dorado irrigated acreage. The geographic distribution of the enrolled acreage is presented in the attached maps. A summary of the sediment and erosion control practices implemented in these drainages is presented in **Figure 2**. Survey responses were received from 100% of Coon Hollow enrolled irrigated acres and 93% of North Canyon enrolled irrigated acres. Survey results for two members and two parcels in North Canyon Creek were unavailable due to changes in ownership. It is apparent from these results that there is a very high degree of sediment and erosion control practice implementation reported in both drainages:

- Virtually all (≥99%) of the enrolled acreage in these drainages is addressed by at least 3 practices for sediment and erosion control.
- More than 80% of the enrolled acreage in the North Canyon drainage is addressed by at least 5 different practices for sediment and erosion control.
- 67% of the enrolled acreage in the North Canyon drainage is addressed by at least 4 different practices for sediment and erosion control.
- In addition to visual monitoring for erosion (98% of irrigated acreage), the most extensively implemented practices in the North Canyon drainage are cover crops (100% of irrigated acreage), vegetative buffers (99%), and field soil surface management (83%).
- In addition to visual monitoring for erosion (98% of irrigated acreage), the most extensively implemented practices in the Coon Hollow drainage are cover crops (95%), and service road cover (99%).

SURVEYS

The degree to which management practices are implemented in the drainage was determined through surveys of all growers in the El Dorado subwatershed, as required by the Pilot Program. Reports summarizing these results are prepared and submitted to the Water Board annually (*ibid.*). As of the date of the most recent annual report (June 2014), the EDCAWQMC had enrolled 296 members who farm 3,052 acres of irrigated agriculture. 297 members (96% of the total) who operate 2,968 acres (97% of the total) completed and submitted management practice surveys for 2014. As required by the Program Plan, EDCAWQMC have verified 360 acres (10.3% of the total) during the 2013-2014 reporting year. The verification process confirmed that the management practices reported in the surveys are, in fact, being implemented in the subwatershed, the represented drainage, and in North Canyon drainage specifically. The results of the verification process are described in the annual report. The relevant survey results for management practice implementation are summarized in the previous section of this request letter (**Management Practices**).

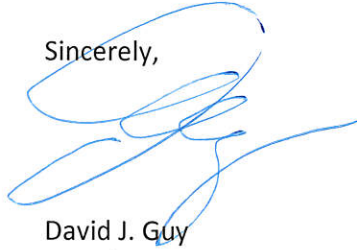
CONCLUSIONS

Based on the extensive implementation of practices to minimize agricultural discharges of runoff and sediment that might contribute to legacy OCL exceedances in the Coon Hollow or North Canyon Creek drainages or the broader El Dorado subwatershed area, we conclude that agricultural management practices have been and continue to be sufficient to prevent agricultural discharges of legacy OCL pesticides to Coon Hollow Creek and North Canyon Creek, and their downstream receiving waters.

Additionally, based on monitoring conducted since February 2007, North Canyon Creek is meeting the water quality objectives for DDE and other legacy OCL pesticides. Based on source evaluations and the level of irrigation management and erosion control implementation, agriculture is not likely to be a significant source of the future legacy OCL exceedances in North Canyon Creek. Expected additional implementation of sediment and erosion control practices by SVWQC members will only improve this situation by further reducing the already low risk of potential contributions from agricultural lands and practices.

Based on these findings, we respectfully request that you make a determination of the completeness of this management plan.

Sincerely,



David J. Guy
President
Northern California Water Association

Cc: Susan McConnell
Susan Fregien
Lynn Coster
Gurbinder Dhaliwal
John Zentner
Sally Ceccarilli Wolf
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Claus Suverkropp

TABLES

Table 1. Monitoring results for *DDE* in in El Dorado Subwatershed water samples

	Event ID	Sample Date	Sample Replicate	DDE (p,p') ⁽¹⁾ , µg/L		Discharge, cfs
North Canyon Creek	9	2006-03-01	1	0.0072	DET	5.52
	10	2006-03-16	1	<0.001	ND	14.37
	12	2006-05-25	1	<0.001	ND	3.86
	13	2006-06-22	1	<0.001	ND	0.23
	14	2006-07-19	1	<0.001	ND	1.0
	15	2006-08-16	1	<0.001	ND	0.0
	16	2006-09-21	1	<0.001	ND	0.37
	17	2007-02-11	1	0.0107	DET	21.35
	19	2007-04-17	1	<0.001	ND	0.79
	25	2007-12-21	1	<0.001	ND	2.05
	31	2008-07-15	1	<0.001	ND	0.34
	32	2008-08-19	1	<0.001	ND	0.09
	33	2008-09-15	2	<0.001	ND	0.08
	33	2008-09-15	1	<0.001	ND	0.08
	74	2012-04-19	1	<0.004	ND	2.21
	78	2012-08-23	1	<0.004	ND	0.06
	87	2013-05-23	1	<0.001	ND	0.14
	90	2013-08-22	1	<0.001	<0.001	0.17
	98	2014-04-16	1	<0.004	ND	0.91
	102	2014-08-19	1	<0.001	<0.001	0.0
Coon Hollow Creek	19	2007-04-17	1	0.0067		0.37
	20	2007-05-16	1	<0.001	ND	0.26
	21	2007-06-19	1	<0.001	ND	0.3
	22	2007-07-18	1	0.0164		0.49
	22	2007-07-18	1 ⁽²⁾	<0.001	ND	0.04
	23	2007-08-21	1	0.0031	DNQ	0.37
	24	2007-09-18	1	0.0073		0.74
	26	2008-01-29	1	<0.001	ND	0.3
	27	2008-02-22	1	0.0046	DNQ	0.67
	29	2008-05-21	1	0.0013	DNQ	0.2
	30	2008-06-18	1	0.0011	DNQ	0.23
	75	2012-05-17	1	<0.004	ND	0.19
	78	2012-08-23	1	<0.004	ND	0.11
	87	2013-05-23	1	0.003	DNQ	0.18
	90	2013-08-22	1	0.003	DNQ	0.29
	98	2014-04-16	1	<0.004	ND	0.36
	102	2014-08-19	1	0.006	DET	0.07

¹ Exceedances are highlighted

² Upstream follow-up site for Coon Hollow Creek

Table 2. Summary of monitoring results for legacy organochlorine compounds in El Dorado subwatershed water samples (2006 - 2014)

Analyte	North Canyon Creek			Coon Hollow Creek		
	Total Samples	Number Detecte d	Concentration , µg/L	Total Samples	Number Detecte d	Concentration , µg/L
Aldrin	20	0		16	0	
Chlordane, cis	20	0		16	0	
Chlordane, trans	20	0		16	0	
Danitol	1	0			0	
DDD(o,p')	16	0		12	0	
DDD(p,p')	16	0		12	0	
DDE(o,p')	16	0		12	0	
DDE(p,p')	16	2	0.0072-0.011	12	7	0.001-0.016
DDT(o,p')	16	0		12	0	
DDT(p,p')	16	0		12	1	0.0014
Dicofol	15	0		13	0	
Dieldrin	20	0		16	0	
Endosulfan I	20	0		16	0	
Endosulfan II	20	0		16	0	
Endosulfan sulfate	20	0		16	0	
Endrin	20	0		16	0	
Endrin Aldehyde	14	0		16	0	
Endrin Ketone	20	0		16	1	0.003
HCH, alpha	20	0		16	0	
HCH, beta	20	0		16	0	
HCH, delta	20	0		16	0	
HCH, gamma	20	0		16	0	
Heptachlor	20	0		16	0	
Heptachlor epoxide	20	0		16	0	
Methoxychlor	20	0		16	0	
Mirex	17	0		13	0	
Nonachlor, cis-	17	0		13	0	
Nonachlor, trans-	17	0		13	0	
Oxychlordane	17	0		13	0	
Perthane	10	0		13	0	
Toxaphene	12	0		10	0	
Total	536	2		432	9	

FIGURES

Figure 1. Irrigation and Sediment and Erosion Control Management Practices in El Dorado Subwatershed

Percent implementation of numbers of management practices for the total responding acreage in the El Dorado subwatershed (2968 acres).

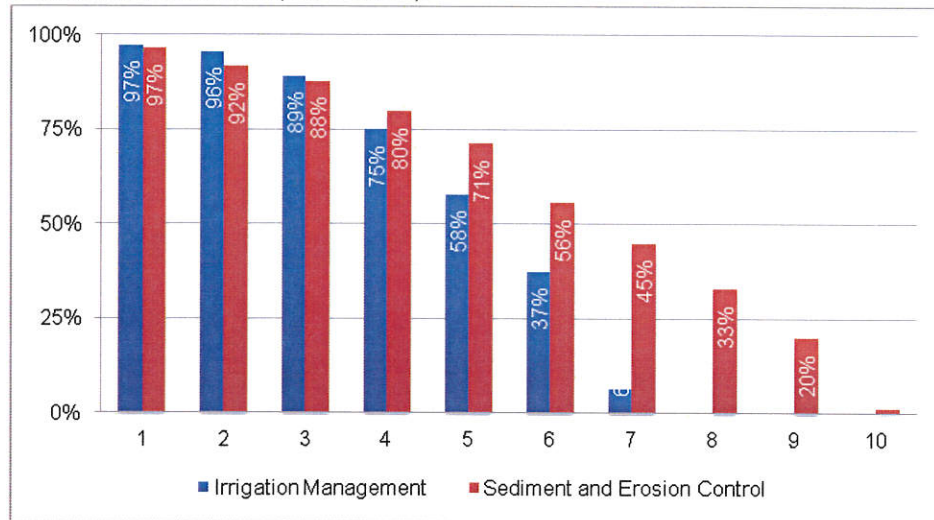
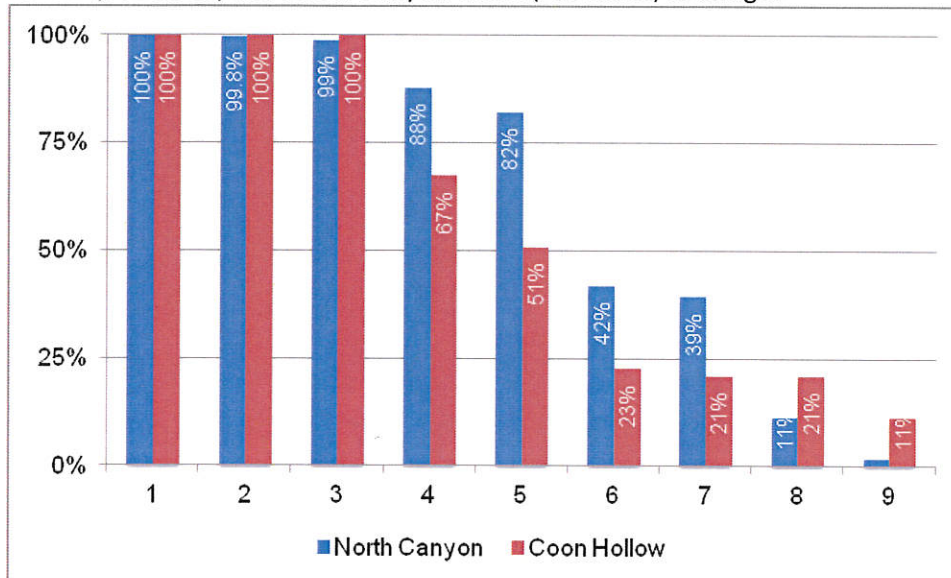


Figure 2. Erosion and Sediment Control Management Practices in the Coon Hollow and North Canyon Creek Drainages

a) Percent implementation of numbers of management practices for total responding acreage in Coon Hollow (301 acres) and North Canyon Creek (161 acres) drainages



b) Percent implementation of specific erosion and sediment control practices for total responding acreage in Coon Hollow (301 acres) and North Canyon Creek (161 acres) drainages

